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ABSTRACT

This study was conducted to examine changes in reflective thinking in preservice teachers in relation to length of time in the teacher education program, teaching certification type, and field placement. Information was collected from student teachers (N=13) through both completion of a questionnaire and through analysis of weekly journals using the Pedagogical Language Acquisition and Conceptual Development Taxonomy of Teacher Reflective Thought. It was hypothesized that: (1) preservice teachers would evidence an increase in levels of reflective thinking throughout the field experience, and (2) that preservice teachers placed with university-trained classroom teachers would be more reflective than those placed with other veteran teachers. Data analysis revealed that length of time in the teacher education program and teacher certification type were significantly related to reflective thinking, and that preservice teachers seeking secondary certification were more reflective than their elementary colleagues. Empirical findings identified curriculum structures that may maximize changes in reflective thinking in preservice teachers and assist teacher educators in implementing the principles of reflective practice. (LL)

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The Effects of Time, Teaching Certification Type, and Field Placement on Reflective Thinking in Preservice Teachers

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Analyses of variance suggested length of time in the teacher education program and teaching certification type were significantly related to reflective thinking. Additionally, preservice teachers seeking secondary certification were more reflective than their elementary cohorts. Empirical findings from this study identified curriculum structures that may maximize changes in reflective thinking in preservice teachers. Such information, hopefully, will assist teacher educators in implementing the principles of reflective practice.

Abstract

The purpose of this study was to examine reflective thinking in 13 preservice teachers as it related to length of time in the teacher education program, teaching certification type, and field placement. Values of the independent variables were obtained through a questionnaire developed by the researcher, while measures of the dependent variable, reflective thinking, were determined through analyses of weekly journals using the Pedagogical Language Acquisition & Conceptual Development Taxonomy of Teacher Reflective Thought (Simmons, Sparks, Starko, Pasch, & Colton, 1989).

Previous research suggested positive correlations between reflective thinking and the independent variables of time and field placement. It was hypothesized (1) preservice teachers would evidence an increase in the levels of reflective thinking throughout the semester and (2) preservice teachers placed with university-trained classroom teachers would be more reflective than those placed with other veteran teachers. However, previous research did not corroborate a relationship between teaching certification type and the reflective thinking of preservice teachers. Therefore, investigations into this area were exploratory in nature.

The Effects of Time, Teaching Certification Type, and Field Placement on Reflective Thinking in Preservice Teachers

During the past two decades demographic changes have altered the profiles of countless families, the educational needs of their children, and the school and community environments (Ogle, 1991). Equipped with repertoires of specific teaching skills, many teachers have been unprepared to adapt their instructional behaviors and materials to meet the challenges of today's diverse student populations. Low student achievement and pervasive teacher frustration are logical consequences of this incongruity between teacher and context.

Teacher education programs simply cannot address every student and every situation a prospective teacher will encounter. Rather, they must provide preservice teachers with a general knowledge base of pedagogical principles and practices and a strategy for adapting these principles and practices. For many teacher educators John Dewey's model of reflective practice is that strategy of adaptation (Hillkirk & Dupuis, 1989).

Reflective practice is a disciplined inquiry into the motives, methods, materials, and consequences of educational practice. It enables practitioners to thoughtfully examine

conditions and attitudes which impede or enhance student achievement. Reflective teachers

(1) are responsive to the unique educational and emotional needs of individual students;

(2) question personal aims and actions; and

(3) constantly review instructional goals, methods, and materials (Pollard & Tann, 1987).

The paradigm of reflective practice is hardly a new one. In his seminal work, How We Think, published in 1909, John Dewey explained the concepts of reflective thinking and teaching. Reflective thinking, Dewey wrote, emphasizes the consequences of ideas and implies future physical action; it is not merely an exercise in theoretical manipulation or intellectual entertainment (Dewey, 1909/1933). Using methods of rational, systematic inquiry, the reflective person is able to confront and solve a variety of personal and professional obstacles; to be a proactive force in his/her environment.

In nurturing and sustaining habits of reflective thought, Dewey advocated the cultivation of three attitudes: Openmindedness, whole-heartedness, and intellectual responsibility. "Openmindedness" (Dewey, 1909/1933, p. 30), the first of these desired attitudes, implies an intellectual receptiveness, a willingness to dispassionately consider multiple

and novel ideas. Such openmindedness is accompanied by a sense of convergent attention or "whole-heartedness" (Dewey, 1909/1933, p. 31). All of the individual's mental, emotional, and physical resources are committed to the resolution of the problem. Ultimately, though, these admirable qualities of openmindedness and whole-heartedness are dangerous if not tempered by notions of "intellectual responsibility" (Dewey, 1909/1933, p. 32). Intellectual responsibility insists the reflective thinker consider the consequences of any proposed plan, the short-term and long-term effects of suggested behaviors.

Donald Schon, among others, has corroborated and expanded Dewey's observations on reflective thinking in his books, The Reflective Practitioner and Educating the Reflective Practitioner (Schon, 1983, 1987). The truly effective, reflective practitioner, Schon argues, must augment technical expertise with personal insights and artistry (Schon, 1983, 1987). Situations, despite seeming similarities, are unique problems which the practitioner must face. Solutions to these problems often lie outside the realm of existing professional knowledge; thus, the necessity for problem solving artistry or reflective practice.

The importance of this study lies in its attempt to promote reflective thinking and teaching strategies in programs of teacher education. Specifically, this study examined reflective thinking

in preservice teachers as it related to length of time in the teacher education program, teaching certification type, and field placement. Empirical data from this study identified curriculum structures that may maximize changes in reflective thinking in preservice teachers. Such information, hopefully, will assist teacher educators in implementing the principles of reflective practice.

This study, using dialogue journals to examine reflective thinking, differed from previous research on reflective thinking in several ways. First of all, participating preservice teachers were given preliminary instruction and explicit guidelines in writing reflective dialogue journals. Secondly, this study included weekly journals from the entire eight-week semester; not just selected entries from the beginning, middle, or end of the semester. Furthermore, previous research on reflective dialogue journals employed qualitative analysis techniques, techniques which allow recurring themes to emerge from the journals and provide the organizational framework for the data (Campbell, 1983; Martin & Wedman, 1988). This study approached the journal analyses with identifiable themes and an organizational framework; the RPT Taxonomy (Simmons, Sparks, Starko, Pasch, & Colton, 1989) guided journal analyses. Finally, few of the existing studies explored the relationship between reflective thinking and other

variables such as length of time in the teacher education program, teaching certification type, and field placement.

Purpose

The purpose of this study was to examine reflective thinking in preservice teachers as it related to length of time in the teacher education program, teaching certification type, and field placement. Primary research questions included:

(1) Is there a relationship between the reflective thinking of preservice teachers and their length of time in the teacher education program?

(2) Does this relationship between reflective thinking of preservice teachers and their length of time in the teacher education program generalize across the variables of teaching certification type and field placement?

Secondary research questions were:

(3) Is there a significant difference in the reflective thinking of preservice teachers seeking elementary and secondary teaching certification?

(4) Is there a significant difference in the reflective thinking of preservice teachers placed with university-trained classroom teachers and other veteran teachers?

Previous research suggested positive correlations between reflective thinking and the independent variables of time and field placement. It was hypothesized (1) preservice teachers would evidence an increase in the levels of reflective thinking throughout the semester (Noordhoff & Kleinfeld, 1990) and (2) preservice teachers placed with university-trained classroom teachers would be more reflective than those placed with other veteran teachers (Koskela, 1985; Richert, 1987). However, previous research did not corroborate a relationship between teaching certification type and the reflective thinking of preservice teachers. Therefore, investigations into this area were exploratory in nature.

Method

Subjects

The sample used in this study was composed of 13 preservice teachers (11 females, 2 males) from a private, selective university in the southeast. Eight of the participants were early childhood education majors, while the remaining five were seeking secondary certification. Of these five, two were concentrating in English, and three were focusing in social studies. At the time of data collection, subjects were participating in their initial semester of extended clinical field experience. During this eight-week semester each preservice teacher spent 20 hours a week

in a supervised teaching practicum in various elementary and secondary schools; completed remaining coursework required for degree and/or certification completion; and attended a weekly, university-based teaching seminar with their peers.

Instrumentation

The Pedagogical Language Acquisition & Conceptual Development Taxonomy of Teacher Reflective Thought (RPT Taxonomy) (Simmons, Sparks, Starko, Pasch, & Colton, 1989) was used to assess the reflective thinking abilities of preservice teachers as evidenced in their weekly journals. The perspectives and writings of John Dewey, Donald Schon, and Max Van Manen provide the basic foundation of the RPT Taxonomy with their emphases on the

(1) attitudes of whole-heartedness, openmindedness, and intellectual responsibility;

(2) active concern for consequences of actions;

(3) willingness to monitor, evaluate, and modify practice as necessary; and

(4) use of inquiry to critically examine pertinent classroom and social factors inherent in the learning situation (Dewey, 1909/1933; Schon, 1983, 1987; Van Manen, 1977).

In examining the categories of the RPT Taxonomy itself, the theoretical orientations of these philosophers are evident. The

participant is first asked to describe a teaching incident and generate possible causes of the event's instructional level of success. This description and explanation are decidedly reminiscent of Schon', reflection-on-action and reframing of the problem, Dewey's collection of relevant data and generation of possible hypotheses, and Van Manen's levels of reflectivity (Dewey, 1909/1933; Schon,1983, 1987; Van Manen, 1977).

Specifically, Levels 1, 2, and 3 of the RPT Taxonomy differentiate between types of descriptions of a teaching activity: Level 1 indicates the respondent provided no description of a teaching event; Level 2 denotes a description using simple, lay-person language; and Level 3 involves a description in appropriate, pedagogical terms. Similarly, an explanation of the instructional activity's level of success may also be classified, a classification based on the breadth of concern. For examples, a Level 4 explanation relies on tradition or personal preference; Level 5 suggests a cause and effect explanation employing standard, accepted pedagogical principles; Level 6 examines contextual and conditional factors which impact the learning environment; and Level 7 focuses on ethical, social, and political issues of educational practice.

Procedures

Preservice teachers were introduced to reflective thinking and dialogue journal writing in the first seminar as they learned of the philosophies of John Dewey and Donald Schon and engaged in various exercises to stimulate reflection and self-awareness. Using specific guidelines and topics which corresponded to the seminar lectures, preservice teachers submitted weekly journals to their field supervisors. During the following week, field supervisors critiqued each journal entry, offering probing comments, questions, and clarification when necessary. Journals were then returned to the students at the beginning of the next class session.

In the course of the semester each student teacher wrote nine journal entries, eight of which were analyzed in this study (N = 102). Guided by the RPT Taxonomy, two researchers coded the journals and assigned each entry a single score. This single score denoted the highest level of reflective thought evidenced in that particular journal. The inter-rater reliability for these researchers was .71, a coefficient determined by an adaptation of the Spearman-Brown prophecy formula. Even though the obtained reliability coefficient of .71 reveals a lack of 100% initial agreement between the two coders, a consensus was always reached through careful, considered discussion. Therefore, the final

score of reflective thinking for each journal represented a unanimous decision.

Results

Generally, statistical analyses suggested a moderate, positive correlation, $r(7) = 0.432$, $p > .05$, between length of time in the teacher education program and changes in reflective thinking. Preservice teachers did exhibit a significant change in reflective thinking by the end of the semester, $F(7, 94) = 6.049$, $p < .05$, even though this pattern of change was not generalized to other variables in the study. Tukey's HSD Test for Multiple Comparisons determined precise times in the semester when preservice teachers exhibited these significant changes in reflective thinking. Beginning with Week 3 of the semester, an almost unbroken pattern of statistically significant change in reflective thinking was apparent.

Analyses also indicated a small, but positive correlation, $r(1) = 0.221$, $p > .05$, between teaching certification type and changes in reflective thinking. Additionally, an analysis of variance revealed a significant difference in the reflective thinking of elementary and secondary preservice teachers, $F(1, 100) = 6.617$, $p < .05$. To determine exactly which group (elementary or secondary) exhibited higher levels of reflective thinking, a closer examination of the frequency distribution,

means, and standard deviations of reflective thinking scores was warranted. The frequency distribution of these scores for elementary (M = 5.344; SD = 0.946) and secondary (M = 5.842; SD = 0.945) preservice teachers supported the following observations:

(1) For those preservice teachers seeking elementary certification, 61% of their journals exhibited lower levels of reflective thought (Levels 4 and 5 from the RPT Taxonomy), while only 39% displayed higher levels of reflection (Levels 6 and 7).

(2) For those preservice teachers seeking secondary certification, almost the opposite was true. Thirty-seven percent of their journals evidenced lower levels of reflective thought, whereas 63% contained examples of higher levels of reflective thinking.

Analyses, however, failed to document any positive relationship between reflective thinking and the remaining independent variable of field placement. Furthermore, no significant differences in reflective thinking associated with this variable were discovered. There was no statistically significant difference in the reflective thinking of preservice teachers placed with university-trained classroom teachers and those placed with other veteran teachers.

Discussion

The purpose of this study was to examine the changes in reflective thinking in preservice teachers as it related to length of time in the teacher education program, teaching certification type, and field placement. Findings from the study must be interpreted with several limitations in mind. First of all, theoretical considerations and the use of dialogue journals were discussed as they related to the field experience semester of teacher preparation programs and not the curricula *in toto*. Additionally, the avenue of assessment of reflective thinking, (i.e., through dialogue journals), may be a truer indicator of the preservice teachers' *writing* abilities rather than their *reflective* abilities. Finally, perhaps the most serious limitation of the study involved the size and composition of the sample. The small sample, composed of mostly white, middle-to-upper class females from a private university, hardly typified the national preservice teacher population. Generalization of these findings to the entire teacher education program or other preservice populations must be tentative.

The results of this study indicated a moderate, positive correlation between reflective thinking and length of time in the teacher education program. Generally, beginning with Week 3 of the semester, a steady pattern of statistically significant change

in reflective thinking was apparent. However, two findings were puzzling:

(1) the lack of significant change between Weeks 6 and 7 and

(2) the relatively low mean reflective thinking score evidenced from the Week 5 journals.

Conversations with university field supervisors and an examination of the seminar's course syllabus may have provided clues to the lack of significant change between Weeks 6 and 7. During this first semester of part-time clinical field experience, preservice teachers are developing and refining numerous pedagogical skills. Their evolving mastery of these skills is evaluated toward the end of the semester through the University Preservice Evaluation Instrument, an instrument which incorporates a written portfolio of lesson plans and a classroom observation of actual teaching performance. This evaluation may account for as much as 30% of the university seminar course grade and is typically a source of tremendous stress for the beginning preservice teachers.

According to field supervisors, preservice teachers frequently experience a brief, intellectual lull following the completion of the evaluation. When this study on reflective thinking was undertaken, the written portfolio of lesson plans

from this important assignment was due between Journals 6 and 7. Given these circumstances, the lack of significant change in reflective thinking between Journals 6 and 7 was not surprising.

Secondly, the relatively low mean reflective thinking score from the Week 5 journals was also puzzling. This time, neither observations from field supervisors nor an examination of the seminar's syllabus provided a clue for the statistical phenomenon. Perhaps the low mean score may have resulted from the assigned subject in Journal 5; namely, "Unit Planning." Are certain topics more conducive to extensive reflective analysis than others? Do the areas of "Observed Management Strategies" and "Evaluation Techniques," for examples, readily elicit higher levels of reflective thinking while "Unit Planning" prompts merely pedestrian comments? The choice and order of journal topics may have influenced the pattern of change in reflective thinking evidenced in this study, and further investigation into this issue is definitely warranted.

Results from this study also indicated a small, positive correlation between teaching certification type and changes in reflective thinking. Additionally, analyses revealed secondary preservice teachers were more reflective than their elementary cohorts. Perhaps the findings of this portion of the study <u>do</u> accurately portray the differences in reflective thinking between

elementary and secondary preservice teachers. Or, perhaps the results mirror one of the limitations of the study stated earlier. It was noted the avenue of assessment of reflective thinking (i. e., through analyses of weekly journals) may have actually measured subjects' writing abilities rather than their reflective abilities. Following this line of reasoning, those students more adept at articulating notions of reflective practice would exhibit higher reflective thinking scores.

A closer look at the study's sample reveals the possibility of this assessment of writing, rather than reflective abilities. Of the five preservice teachers seeking secondary certification, two were concentrating in English, and three were focusing on social studies. English and social studies, unlike other secondary fields of mathematics or science, for examples, typically emphasize the development of expert compositional skills. Quite possibly, the secondary preservice teachers in this study were merely more adept at writing than reflecting.

Finally, statistical analyses failed to suggest a positive correlation between reflective thinking and the remaining independent variable of field placement. Nor did analyses reveal any significant differences in the reflective thinking of preservice teachers placed with university-trained classroom teachers and those placed with other veteran teachers. Even

though previous research documented positive correlations between these variables, the findings from this study did not corroborate such relationships.

Why did findings from this study fail to substantiate previous research on reflective thinking and field placement? Several factors may have confounded the results. For examples, aspects of the school setting and the ages, academic backgrounds, and experiences of cooperating mentor teachers may have impacted changes in reflective thinking in these preservice teachers.

However, a cause and effect relationship for these results is impossible to determine with certainty. Until further research is done in the area of reflective thinking and its relationships to teaching certification type and field placement, generalizations of these results to other preservice populations should be made with caution.

Implications for Teacher Education

The model of reflective practice is still an evolving and largely philosophical concept. This empirical study examined reflective thinking in preservice teachers as it related to length of time in the teacher education program, teaching certification type, and field placement. It identified several instructional methods and/or organizational patterns which may be helpful in

integrating reflective thinking strategies into existing teacher education programs.

First of all, statistical analyses confirmed a positive correlation between length of time in the teacher education program and changes in reflective thinking in preservice teachers. The sample, as a whole, became more adept at higher levels of reflective inquiry. A number of components inherent in the clinical field experience could have caused this increase in reflective thinking. However, informal observations and conversations with preservice teachers suggested dialogue journals may have been major catalysts in promoting and refining strategies of reflective thought. Explicit guidelines for writing reflective journals, journal topics complementing seminar discussions, and extensive and probing feedback from field supervisors were frequently mentioned as instrumental in developing reflective thinking. It is recommended the participating university's teacher education program retain these aspects of writing dialogue journals.

Secondly, results from the study identified a statistically significant difference in the reflective thinking scores of elementary and secondary preservice teachers, with secondary preservice teachers typically exhibiting higher levels of reflective thought. Although these finding may have been

confounded by the writing abilities of the respective groups, tentative suggestions for program improvement may still be presented.

Many instructional, management, and evaluation issues and techniques are common to all preservice teachers regardless of their certification type. Some instructional approaches and concerns are unique to elementary, middle, and secondary preservice teachers, respectively, and require attention from these diverse perspectives. Lectures and activities involving the entire class could address concerns characteristic of the general preservice population and foster universal professional collegiality. Similarly, small groups distinguished by teacher certification type could focus on issues and methodology typical of their student population and promote a more, intimate, subject-specific professional rapport.

It is recommended the university's teacher preparation program retain its present weekly seminar format, a format which combines elementary, middle, and secondary preservice teachers into a single class. Additionally, based on the findings of this investigation, it is recommended more opportunities for small group interaction be integrated into the seminar structure.

In summary, the university's clinical field experience attempts to coordinate and integrate several reflective components

into a complementary, cohesive holistic practicum. Each activity supports and extends the others; each activity forges theoretical principles and experiential knowledge; and each activity stimulates and refines skills of reflective thought and practice. These two recommendations may be useful to university teacher educators in reconceptualizing and redesigning their program of study to meet constantly evolving educational needs.

Directions for Future Research

Even though the paradigm of reflective practice answers many professional needs and questions, it simultaneously raises issues for further research. This empirical study alone has elicited four major research questions, questions which must be answered if Schon's reflective practitioner is to become the norm rather than the exception in educational communities.

First of all, does increased reflection actually enhance classroom performance? Are reflective, thoughtful, analytical teachers more adept in promoting a students' emotional, physical, and cognitive growth than their unreflective, complacent, routine-bound colleagues?

Secondly, how is reflective practice identified in the classroom? Many studies, including this one, have used secondary sources such as structured interviews, dialogue journals, and written philosophies of education to detect the presence of

reflective thinking. But, these avenues ultimately fail to target actual behaviors in the classroom which connote a reflective orientation. An observation tool, to be used by the researcher during a classroom visit, would provide a more direct means of determining reflective practice. Several such instruments have been developed and pilot-tested; however, more research in this area is warranted before these reflective teaching observation instruments gain widespread acceptance (Jadallah, 1984; Lambert, 1976).

Additionally, once the efficacy of reflective practice has been established and classroom examples of the paradigm isolated, means of predicting reflective thought may then be explored. Are these certain program, personality, and/or cognitive variables which can predict the presence or absence of reflective thinking? Can a preservice teacher with an inclination towards reflective inquiry be identified by a particular personal and/or intellectual characteristic or preference? Or, does such a propensity to reflection manifest itself only with age and experience? Ideally, if initial predispositions towards reflective thinking in preservice teachers could be identified, then teacher educators could structure appropriate reflective activities for each group.

Finally, unanticipated and unexplained findings from this study merit further empirical examination. Specifically,

(1) Is there a relationship between the reflective thinking of preservice teachers and their writing abilities?

(2) Is there a relationship between the reflective thinking of preservice teachers and the selection and order of journal topics?

(3) Is there a relationship between the reflective thinking of preservice teachers and previous teaching experiences?

(4) Is there a relationship between the reflective thinking of preservice teachers and aspects of the school setting?

(5) Is there a relationship between the reflective thinking of a preservice teacher and his/her cooperating teacher's years of experience?

(6) Is there a relationship between the reflective thinking of a preservice teacher and his/her cooperating teacher's academic preparation?

(7) Is there a relationship between the reflective thinking of a preservice teacher and his/her cooperating teacher's age?

These major research questions, though vital to a clear and complete understanding of reflective practice, are, ultimately,

catalysts for future study. Questions beget research; research begets more questions; and more questions beget more research. The cycle of reflective inquiry never ends.

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